

2003: Collaborative Study with Irish Marine Institute Provides New Insights on the Mode of Action for Azaspiracid, a New Algal Toxin

Azaspiracid (AZA) is a newly discovered algal toxin found recently in mussels from several northern European countries, including Ireland, UK, and Norway, and reported to have caused severe human intoxications in The Netherlands, Ireland, France, and Italy. Although AZA has been found to cause a range of severe effects in mammals, including tumor promotion, it remains uncertain as to how this toxin actually functions in the body. In order to address this issue, CCEHBR scientists have partnered with colleagues at the Irish Marine Institute to examine the mode of action for AZA. Our initial investigations have shown that AZA-1 is differentially cytotoxic to seven cell types, compromises cell membrane integrity, and alters cytoskeletal organization. These data suggest that AZA-1 has some unique properties among previously described marine toxins. Results of this work will be useful in designing bioassay tests for detecting AZA in seafood, identifying a treatment for the human illness associated with AZA exposure, and tracking this toxin in marine food webs.

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